

## CLAIMS

What is claimed is:

1. A system, comprising:
  - a carrier adapted to support a disk drive;
  - a drawer having a receptacle;
  - a drive mechanism mounted in the receptacle;
  - sensor means located in the receptacle for sensing the carrier;
  - control means associated with the drawer, the drive mechanism, and the sensor means; wherein
    - when the carrier is inserted into the receptacle, the sensor means senses the carrier and signals the control means to actuate the drive mechanism to engage and draw the carrier into the receptacle, such that the carrier is fully seated in the receptacle.
2. The system of claim 1 wherein the carrier has a recess containing a pin that is engaged by the drive mechanism.
3. The system of claim 1 wherein the sensor means senses a magnet on the carrier.
4. The system of claim 1 wherein the sensor means comprises a Hall-Effect sensor.
5. The system of claim 1 wherein the drawer has a self-healing optical signal connector and a magnetic power coupling that are adapted to interconnect with like components on the disk drive.

1           6.     The system of claim 1 wherein the drive mechanism comprises a motor that  
2           drives a worm gear, and a cam that is driven by the worm gear to engage the carrier.

1           7.     The system of claim 1 wherein the carrier is unseated and ejected from the  
2           drawer by reversing the drive mechanism.

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1           8.     A disk drive library, comprising:  
2                 a disk drive carrier having a magnet;  
3                 a disk drive mounted in the carrier;  
4                 a drawer having a receptacle;  
5                 a drive mechanism mounted in the receptacle;  
6                 a sensor located in the receptacle for sensing the magnet on the carrier;  
7                 control means associated with the drawer, the drive mechanism, and the  
8     sensor; wherein

9                 when the carrier is partially inserted into the receptacle, the sensor senses the  
10                magnet and signals the control means to actuate the drive mechanism to engage and  
11                draw the carrier into the receptacle, such the carrier is fully seated in the receptacle  
12                and the disk drive is interconnected with the drawer; and wherein

13                the carrier is unseated and ejected from the drawer by reversing the drive  
14                mechanism.

1           9.     The disk drive library of claim 8 wherein the carrier has a recess containing a  
2                 pin that is engaged by the drive mechanism.

1           10.    The disk drive library of claim 8 wherein the sensor is a Hall-Effect sensor.

1           11.    The disk drive library of claim 8 wherein the drawer has a self-healing optical  
2                 signal connector and a magnetic power coupling that interconnect with like  
3                 components on the disk drive.

1           12.    The disk drive library of claim 8 wherein the drive mechanism comprises a  
2                 motor that drives a worm gear, and a cam that is driven by the worm gear to engage  
3                 the carrier.

1 13. A method of interconnecting a disk drive system, comprising the steps of:  
2 (a) providing a carrier with a disk drive, and a drawer having a receptacle,  
3 a drive mechanism, and a sensor;  
4 (b) inserting the carrier into the receptacle;  
5 (c) sensing the carrier with the sensor; and then  
6 (d) actuating the drive mechanism to engage and draw the carrier into the  
7 receptacle, such the carrier is fully seated in the receptacle.

1 14. The method of claim 13 wherein step (c) comprises sensing a magnet on the  
2 carrier.

1 15. The method of claim 13 wherein step (d) further comprises optically  
2 interconnecting signal connectors and magnetically coupling power connectors on the  
3 disk drive and the drawer.

1 16. The method of claim 13 wherein step (d) comprises driving a worm gear to  
2 rotate a cam to engage the carrier.

1 17. The method of claim 13, further comprising the step of unseating and ejecting  
2 the carrier from the drawer by reversing the drive mechanism.